

APPLICATION NO. 09/871,243
DOCKET NO. P1038/N8788

COMPLETE LISTING OF CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in this application:

Listing of Claims:

1. (currently amended) A material useful as a substrate for an embossed flexible graphite sheet, the material comprising a composite flexible graphite sheet comprising a plurality of zones of flexible graphite sheet, wherein:

at least one of said zones comprises resin-impregnated graphite sheet; and

at least one of said plurality of zones has a characteristic different from at least one other of said plurality of zones wherein the difference in the characteristic is greater than about 5%.

wherein the material further comprises a nonporous material or a foraminous material.

2. (canceled)

3. (previously presented) The material of claim 1 wherein the characteristic is one selected from the group consisting of: electrical conductivity, thermal conductivity, density, void condition, area weight, gas permeability, water permeability, particle size, type of graphite starting material, presence and composition of filler materials, degree of graphite intumescence, latent

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intumescence potential, the presence and composition of intercalation compounds, the presence and composition of residues, resin content and composition, degree of resin drying, degree of resin cure or cross-link.

4. (previously presented) The material of claim 1 wherein the thickness of one zone of the at least one of said plurality of zones is less than about 0.1 mm.
5. (previously presented) The material of claim 1 wherein at least one zone of said at least one of said plurality of zones is comprised of sheets less than about 2.0 mm in thickness.
6. (original) The material of claim 1 wherein the difference in the characteristics is greater than about 5%.
7. (original) The material of claim 1 comprising as at least one of said zones, a graphite sheet material of area weight of from about 0.001 to about 2.0 g/cm².
8. (previously presented) The material of claim 1 further including a layer of a diverse material interposed between at least two zones of said plurality of zones.

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9. (previously presented) The material of claim 8 wherein the diverse material is a foraminous material selected from the group consisting of woven fabrics, nonwoven fabrics, webs of plastic, metal, perforated films, and foils.

10. (previously presented) The material of claim 8 wherein the diverse material is a nonporous sheet, nonporous film or nonporous foil.

11. (previously presented) The material of claim 1 wherein at least one of said plurality of zones has a density of at least about 1.1 g/cc and at least one of said plurality of zones has a density of less than about 1.0 g/cc.

12. (previously presented) The material of claim 1 wherein a resin is present at a level of at least about 5% in the flexible graphite sheet.

13. (original) The material of claim 12 wherein the resin comprises an acrylic-based resin system, an epoxy-based resin system or a phenolic-based resin system.

14-28 (canceled)

29. (currently amended) A material useful as a substrate for an embossed flexible graphite article, the material comprising a composite of a plurality of flexible graphite sheets, wherein at least one flexible graphite sheet of said plurality

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has a density that differs by more than 5% from the density of a second flexible graphite sheet of said plurality, the density of said one flexible graphite sheet comprising between 0.1 g/cc up to 1.3 g/cc and the density of said second flexible graphite sheet comprising at least 1.4 g/cc to no more than 1.8 g/cc, and further wherein said one sheet of flexible graphite comprises a top layer of said composite and said second sheet of flexible graphite comprises a bottom layer of said composite.

30. (previously presented) The material according to claim 29 wherein said property comprises one selected from the group consisting of: electrical conductivity, thermal conductivity, density, void condition, area weight, gas permeability, water permeability, particle size, type of graphite starting material, presence and composition of filler materials, degree of graphite intumescence, latent intumescence potential, the presence and composition of intercalation compounds, the presence and composition of residues, resin content and composition, degree of resin drying, degree of resin cure or cross-link.

31-33 (canceled)

34. (previously presented) The material according to claim 29 wherein said property comprises resin content.

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35. (previously presented) The material according to claim 29 wherein said property comprises void condition.

36. (previously presented) The material according to claim 29 wherein said composite comprises a second material, said second material comprises a nonporous material or a foraminous material.

37. (previously presented) The material according to claim 36 wherein said second material comprises an interlayer of said composite.

38. (previously presented) The material according to claim 29 wherein said difference comprises a value in the range of 10% up to 200%.

39. (currently amended) A material useful as a substrate for an embossed flexible graphite sheet, the material comprising a composite flexible graphite sheet comprising a plurality of zones of flexible graphite sheet, wherein:

at least one of said zones, a graphite sheet material of area weight of from about 0.001 to about 2.0 g/cm²; and

at least one of said plurality of zones has a characteristic different from at least one other of said plurality of zones wherein the difference in the characteristic is greater than about 5%.

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wherein the material further comprises a nonporous material or a foraminous material.

40. (previously presented) A material according to claim 39 wherein at least one of said zones comprises resin-impregnated graphite sheet.

41. (previously presented) The material of claim 39 wherein the characteristic is one selected from the group consisting of: electrical conductivity, thermal conductivity, density, void condition, area weight, gas permeability, water permeability, particle size, type of graphite starting material, presence and composition of filler materials, degree of graphite intumescence, latent intumescence potential, the presence and composition of intercalation compounds, the presence and composition of residues, resin content and composition, degree of resin drying, degree of resin cure or cross-link.

42. (previously presented) The material of claim 39 wherein the thickness of one zone of the at least one of said plurality of zones is less than about 0.1 mm.

43. (previously presented) The material of claim 39 wherein at least one zone of said at least one of said plurality of zones is comprised of sheets less than about 2.0 mm in thickness.

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44. (previously presented) The material of claim 39 wherein the difference in the characteristics is greater than about 5%.

45. (previously presented) The material of claim 39 further including a layer of a diverse material interposed between at least two zones of said plurality of zones.

46. (previously presented) The material of claim 45 wherein the diverse material is a foraminous material selected from the group consisting of woven fabrics, nonwoven fabrics, webs of plastic, metal, perforated films, and foils.

47. (previously presented) The material of claim 45 wherein the diverse material is a nonporous sheet, nonporous film or nonporous foil.

48. (previously presented) The material of claim 39 wherein at least one of said plurality of zones has a density of at least about 1.1 g/cc and at least one of said plurality of zones has a density of less than about 1.0 g/cc.

49. (previously presented) The material of claim 39 wherein a resin is present at a level of at least about 5% in the flexible graphite sheet.

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50. (previously presented) The material of claim 49 wherein the resin comprises an acrylic-based resin system, an epoxy-based resin system or a phenolic-based resin system.

51. (canceled)